

XI. — *On some new Cretaceous Crustacea.* By FREDERICK M'Coy, F.G.S., Hon. F.C.P.S., Professor of Natural Science in the University of Melbourne, late Professor of Geology and Mineralogy in the Queen's University of Ireland.

[With a Plate.]

THE line, to the importance of which I first drew attention in a former paper in the 'Annals,' on Crustacea, and to which I there applied the distinctive name of "nuchal furrow," has been also recognized more recently by Professor Milne-Edwards, in his late memoir in the 'Annales des Sciences' on the nomenclature of the hard parts of Crustacea, in which memoir he applies to it the name "cervical furrow," and suggests that it indicates two rings in the carapace of most Decapods, instead of only one, as heretofore supposed. As the nomenclature of Professor Milne-Edwards is much more elaborate than that of his predecessors, I adopt it here, in the description of the *Brachyura* in this paper: the alterations in my former descriptions, necessary to bring them in accordance with the present ones, can be easily made by any interested person studying the French paper referred to.

Hoploparia Saxbyi (M'Coy). Pl. IV. fig. 1.

Desc. Carapace nearly cylindrical, averaging from the edge of orbit to posterior side margin 2 inches 4 lines, width about 1 inch 3 lines; nuchal furrow very strong, 1 inch 3 lines from edge of orbit, and therefore nearer to it than to the posterior end of carapace; entire surface of carapace closely covered with rough, irregularly unequal, pointed granules (averaging five or six in two lines), rather finer on the posterior half; rostrum broad, depressed in the middle, with a slight elevated mesial line, scarcely reaching the nuchal furrow; rising on the sides into two prominent, longitudinal, coarsely tuberculated ridges, from each of which a row of tubercles extends within half an inch of the nuchal furrow; on the outer side of each of these rostral ridges, and distant about half the width of the rostrum, is a similar row of five or six tubercles from the edge of the orbit; cheek-ridges very large, prominent, armed with large projecting compressed spines. Abdominal segments covered with a granulation rather finer and more uniform than that of the carapace, but the last segment and middle tail-flap with a much coarser, flattened or squamous tuberculation; transverse suture of outer tail-flap strongly marked, from the great thickness of the basal portion; anterior articular portion of each segment moderately convex,

suture dividing it from the posterior portion strong. *Chelæ* very large, extending beyond the rostrum as far as from thence to end of tail-fins, depressed, obtusely carinated at the outer and inner edges, moderately convex in the middle; right hand much narrower than the left, semielliptical, its greatest width (at base of moveable finger) 1 inch, equaling the length of the carpus, or two-thirds the length from the base of moveable finger to the carpal joint; the external margin of the penultimate finger gently arched, nearly smooth, flattened above and below; internal margin of hand and moveable finger straighter than the external one, the former nearly smooth, the latter lobed by five or six very large flattened tubercles; cutting edges of both fingers straight, set with very numerous, small, close, obtuse tubercles; length of the last finger about 2 inches 4 lines; length of penultimate joint or hand, from carapace to tip of penultimate finger, about 4 inches 4 lines: left hand subtriangular, length of carpus to tip of fingers 1 inch 1 line, width at base of penultimate finger 1 inch 3 lines, but the margins, which are nearly straight from the carpus, continue to diverge at about the middle of the fingers, and are thence strongly arched inwards towards each other; length of moveable finger 1 inch 9 lines, cutting edge of both fingers much arched, the points being incurved, each set with one very large bluntly conical tooth at about one-third its length from the apex, and two large rounded teeth at about one-third the length from the base; the inner margin of the hand is lobed by five or six large compressed tubercles, both hands covered with a coarse granulation (averaging three granules in 2 lines), with eight or ten scattered tubercles nearly a line in diameter; carpus on each side trigonal, about 1 inch 3 lines long, having a granulation like that of the hands, and six or eight irregularly scattered tubercles on the upper surface, a little more or less than a line in diameter. Length of tail-flaps 11 lines, entire length of abdomen $3\frac{1}{2}$ inches.

This species is easily distinguished from the only other cretaceous species (*H. longimana*, Sow. sp.) by the much superior size, and by the great width and flatness of the chelæ. The beautifully perfect specimen which I figure of this species, was collected by S. M. Saxby, Esq. of Caius College, Cambridge, whose extensive collection of Isle of Wight fossils is so well known through the labours of Dr. Fitton and others. I have great pleasure in dedicating it to him.

Very rare in the upper White rag beds of the Upper greensand of Bonchurch, Isle of Wight.

Coll. Mr. Saxby.

Glyphæa cretacea (M'Coy). Pl. IV. fig. 2.

Desc. Carapace narrow; cephalic portion long; from nuchal furrow to anterior end of inner tuberculated cephalic ridge exceeding the greatest depth of the carapace, and exceeding the length of the triangle enclosed between the nuchal furrow and the posterior converging extremities of the oblique branchial ridges; space below the outer cephalic ridge on each side and the branchial regions covered with a rather coarse, equal granulation (averaging eight to nine granules in 2 lines). Length from anterior end of inner cephalic ridges to posterior end of carapace on dorsal mid-line, slightly more than 10 lines; from middle of nuchal furrow to same point slightly more than 9 lines; greatest depth at middle of carapace 4 lines.

I do not know any possible modification of Milne-Edwards's nomenclature of the parts of Crustacea, which would enable us to describe the ridges and sulci of the branchial region of a *Glyphæa* in terms indicating any homology with corresponding parts in other *Decapoda*. This is of little importance, however, in the description of the species, as the ridges are similar in all the examples of the genus. I am not aware of any other true *Glyphæa* in the cretaceous rocks. This very rare species is extremely like the *Glyphæa rostrata* (Phill. sp.) of the coral rag on a small scale, but is easily distinguished, besides its smaller size, by the much greater proportional length of the cephalic part of the carapace, or that in front of the nuchal furrow, when compared with the portion behind it.

Very rare in the Upper greensand of Cambridge.
(Coll. University of Cambridge.)

NOTOPOCORYSTES (M'Coy).

The judicious researches of Mr. Carter of Cambridge have enabled him to add to the characters I originally published of this genus in the 'Annals,' that there is a notch also in the lower edge of the orbit.

I have detected a specimen in his collection of the common *N. Mantelli* (M'Coy) with a pea-like swelling on one of the branchial regions on the back of the carapace, indicating no doubt the existence during the cretaceous period of a representative of the internal parasitic genus *Bophyrus*, which attaches itself to the internal gills of many Crustacea at the present day, manifesting its presence by the like external symptom.

Notopocorystes Carteri (M'Coy). Pl. IV. fig. 3.

Desc. Carapace elongate, trapezoidal; greatest width (a little

behind the mesial furrow) at the posterior of the three large antero-lateral tubercles of the margin; gently convex, depressed. *Nuchal furrow* obscured by the map-like marking on the anterior part of the carapace, but it is moderately deep and extends from between the two posterior marginal tubercles, with an irregular curve backwards, rounding at a moderate angle under the posterior gastric lobes. *Gastric region* very large; *meso-gastric lobe* forming a very narrow linear ridge, nearly from the nuchal furrow quite to the extremity of the rostrum, completely dividing the great proto-gastric lobes; it is destitute of the large tubercles on this part of the other species, the granulation being almost invisible to the naked eye, except along its edges; its posterior end is confluent with the two transversely rounded, subtrigonal, small *posterior gastric lobes*, which also form nearly smooth elevations immediately in front of the nuchal furrow; the *anterior gastric lobes* (coinciding with the origin of the anterior gastric muscles) form narrow obliquely elongated elevations, running along the front margin, from the inner notch of the orbit to the rostrum, along which their anterior ends abruptly turn, rendering it trifid, including the point of the meso-gastric lobe, which they resemble in being nearly smooth and being edged with a line of slightly larger granules under the lens; *proto-gastric lobes* very large, ornamented on each side with a trident-shaped group of three elongate elevated lobes, nearly equidistant in front, and converging towards the small posterior gastric lobes behind, the outer lobe of the three usually disconnected at the base from the conjoined inner two; it has also a small round elevation immediately anterior and external to its anterior end; no distinct *orbital regions*, but the outer angle of the very large orbits forms the anterior of the three lateral tubercles; the very small triangular *hepatic regions*, coinciding with the middle lateral tubercle, have also a small elevated subtrigonal lobe close to the margin; *anterior branchial region* (or space between the mesial and meso-branchial sulci) forming a broad oblique band on each side, extending from each side of the posterior lateral tubercle to the uro-gastric region; it has one small smoothed elevation at the lateral tubercle, immediately within and in front of which is a very elongate pear-shaped one, having one side coincident with the nuchal furrow, and a long transverse elongated elevation, extending behind the tapering inner end of the last, angulated in the middle beyond the termination of that lobe, and thence bent abruptly backwards and inwards behind the posterior gastric lobes to the *uro-gastric lobe*, which cannot be distinctly separated from the *cardiac lobe*, but is flanked

on each side by the deep lunate hollows, or little fossæ produced by the attachment of the posterior gastric muscles; *posterior cardiac or intestinal region* not distinctly defined from the branchial regions, which latter have a small curved elevated elongation, bordering the inner anterior angle. All these contorted lobe-like elevations on the anterior half of the carapace are very minutely granular, edged by a single row of slightly larger granules, and separated by broad, deep, smooth, concave furrows; the posterior half of the carapace is uniformly minutely granular. Average length 1 inch 2 lines, proportional greatest width $\frac{7.5}{100}$ (often larger).

This very beautiful and distinct species is larger and flatter than the others of the genus, and destitute of the tubercles with which their carapace is marked, by which character, as well as the very curious, slightly elevated, map-like, contorted, lobular markings of the anterior half of the carapace, it is easily distinguished from its congeners. It is comparatively rare, scarcely a dozen specimens having been found, while nearly a hundred have been found of the *N. Mantelli* (M'Coy).

Upper greensand of Cambridge.

(Coll. Mr. Carter, Cambridge.)

REUSSIA (M'Coy), n. g.

Gen. Char. Small: *carapace* moderately tumid; transversely elliptical, front very strongly rounded; anterior lateral margins obtuse; *orbits* of moderate size, broad, oval, approximate: most of the regions of the carapace sharply defined by narrow sulci; *meso-gastric lobe* triangular behind, abruptly narrowed to a linear tongue-shaped extension in front, reaching to the point of the obtusely angular rostrum, where its apex is flanked by two small oval swellings, indicating the *anterior gastric lobes*; *proto-gastric lobes* large, slightly defined on their outer margin; *posterior gastric lobes* united into one transversely oblong space, slightly wider than the base of the meso-gastric lobe, flanked at its posterior corners by the two lunate fossæ of the posterior gastric muscles; *wro-gastric and cardiac regions* undefined, tumid; *posterior branchial regions* much depressed; *anterior branchial or epibranchial lobe* or region triangular, tumid, corresponding with the lateral angle, and greatest width of the carapace, and defined between the narrow sharply-marked linear nuchal furrow, and an oblique *meso-branchial sulcus*, extending from about its middle to a little below the lateral angle of the carapace; *meso-branchial regions* narrow, strongly depressed in their posterior half; *hepatic regions* very large, evenly tumid; *pterygostomian regions*

very tumid; *orbital regions* undefined, two notches in the upper edge of each.

This genus belongs clearly to the true *Brachyura* which are so rare in the fossil state, but is distinct from every living or fossil generic type with which I am acquainted. The types of the genus are the following species, and the *Podophthalmus Buchii* of Reuss (*Versteinerungen der Böhmischen Kreideformation*, p. 15).

The reference to the genus *Podophthalmus* (Desmarest) by Reuss rested upon very slight foundation, as is shown by his remark, that the rare specimen of this little crab which he found "stets mit ihrer Bauchfläche fest ins Gestein eingewachsen, so dass sich nur der Rückenschild sehen liess. Auch die Augen konnten nicht untersucht werden. Desshalb ziehe ich sie auch nur mit Zweifel zu der obengenannten Gattung, mit der sie sonst ganz gut übereinstimmt." I have now observed the orbits, and find they completely negative the reference of the fossils to *Podophthalmus*, for instead of forming extremely long narrow channels, extending to the lateral angle, or widest points, of the carapace, they are small, broad, oval, and the long diameter about double the short one; the forms of the various regions on the carapace are also quite different, as well as the general outline, from the great curvature of the front in the fossil, and consequent shortness and outward slope of the posterior lateral margin.

Reussia granosa (M'Coy). Pl. IV. fig. 4.

Desc. The general form of the carapace as in the generic character; front and anterior lateral margins very strongly curved, so that the lateral angles are on a line with the gastric fossæ, the tumid, very slightly angulated edge bearing five or six irregularly placed, small, distinct tubercles between the orbit and lateral angle; *hepatic region* much larger than the proto-gastric lobes; *meso-gastric lobe* very sharply defined, by deep narrow impressed outlines; line between the proto-gastric and hepatic lobes very faint; nuchal furrow as a sharp, distinctly impressed narrow line, extending from the base of the meso-gastric lobe to immediately in front of the second tubercle from the lateral angle, having a slight backward curve; *epi-branchial lobe* pyriform, tumid, defined by the meso-branchial sulcus, which extends from the inner third of each side of the nuchal furrow to as far below the cardinal angle on the outer margin as the nuchal furrow is above it; *meta-branchial sulcus* on each side forming a sharply impressed line like the others; all the dorsal surface tumid, except the posterior half of the

meso-branchial lobes, and the posterior branchial lobes, which are strongly depressed; *surface* strongly and closely granulated irregularly, the granules being of three or four different sizes; a few small tubercles like those on the anterior margin also occur, one being conspicuous on each side, slightly below the middle of the furrow which separates the proto-gastric from the hepatic lobes, and two on each side on the meso-branchial region a little within the middle. Width of carapace 10 lines, length $5\frac{1}{2}$ lines, transverse length of one orbit $1\frac{1}{2}$ line, depth of middle of hepatic region 3 lines.

The coarsely granular surface easily distinguishes this species from the smooth and glossy *B. Buchii*, Reuss sp. The anterior lateral margins are also strongly curved. There is a third species in the University collection at Cambridge, distinguished from the other two by a very fine uniform granulation of the surface, but it is not sufficiently perfect for description; it might be called *R. granulosa*.

Rare in the Upper greensand of Cambridge.
(Coll. Mr. Carter, Cambridge.)

XII.—On the *Aclis unica*, Auct. By WILLIAM CLARK, Esq.

To the Editors of the *Annals of Natural History*.

GENTLEMEN,

Exmouth, 29th June 1854.

I PROPOSE, with your permission, to give an account of a very rare mollusk which I discovered this day, and which has hitherto evaded, in a living state, all our researches; I have sought it for thirty years, and may therefore sing "Io Pæans" with the illustrious author of the 'Amorum,' as at last, as with him—

"Decidit in casses præda petita meos."

Let this instance of unexpected success impress on us the value of the "nil desperandum." The discovery of this creature has long been a desideratum, as it will solve several malacological questions: it has from Montagu's time run the gauntlet of nearly all the genera, agreeably to the conchological surmises of naturalists, of whom scarcely two are in accord, and all in error; as my notes require me to place it in a position it has never yet occupied, and which I believe will prove to be its true malacological status. Our ignorance of every circumstance attendant on this almost microscopic being has invested it with a strange diversity of position and consequent structure, but the light of